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ABSTRACT

The effectiveness of the microcomputer versions of two computer-based career guidance systems--the System of Interactive Guidance and Information (SIGI) and Discover--was studied. Two questions were posed regarding how college students who have used SIGI or Discover differ in terms of change on selected career development measures and how they evaluate their experience. A career development class of approximately 50 undergraduates was studied. Students were randomly assigned to SIGI or Discover and devoted one of three class periods per week to the system over a two-month period. Subjects were pre- and post-tested with four instruments designed to assess career development. Reaction data were also gathered. Data from the Career Development Inventory indicated a significant change in career development measures--Career Decision Scale, Survey of Career Development, Self-Assessment of Confidence and Progress in Educational/Career Planning--and on the Computer-Assisted Career Guidance Reaction Questionnaire. Significant differences were found between pre- and post-test scores, but the effects of the computer-based guidance systems could not be separated from effects of the course. Subjects gave both systems mostly high ratings. (Six data tables and three instruments are attached.) (YLB)

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Evaluation of Microcomputer Based Career Guidance Systems with College Students: SIGI and Discover

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Historical & Theoretical Framework

Since the mid 1960's, computers have been programmed to perform complex administrative, clerical, and teaching functions that make use of their ability to store and retrieve large amounts of data. Interest in computer-assisted instruction led eventually to researchers looking at the technical feasibility of computerized career guidance. During the late 1960's and 1970's, many researchers, primarily supported by funds from government and private industry, have developed ever more sophisticated and comprehensive computerized career guidance systems. Growth of these computer systems was encouraged due to the increasing demands on inadequate numbers of career counselors to have relevant, accurate, up-to-date information for and about increasing numbers of students. Counselors were finding it too time consuming to store, update, and access the necessary career-oriented information, and still have time for needed personal counseling. Counseling resources were being used inefficiently and students' career decisions were being made haphazardly. Counseling professionals saw the computer as a useful tool to improve career guidance services.

Statement of the Problem

Two of the microcomputer based career guidance systems which are gaining widespread acceptance are the System of Interactive Guidance and Information (SIGI), produced by Educational Testing Service (ETS) and Discover, produced by the American College Testing (ACT) program. Both systems attempt to lead the user through an evaluation of abilities, interests, and/or values to establish a personal basis for choosing career alternatives. This personal inventory is applied to extensive occupational and educational information stored within the system to enable the user to make realistic career decisions. These and other similar computer based guidance systems offer the opportunity for revolutionizing the career guidance services provided to high school and college students.

However, because of their recent adaptations to microcomputers, limited research exists evaluating their effectiveness. It is the purpose of this research to seek answers to the following questions concerning the effectiveness of the microcomputer version of the SIGI and Discover systems:

Question 1 — How do college students who have used SIGI or Discover differ in terms of change on the following career development measures:

a) Career Development Inventory
b) Career Decision Scale
c) Survey of Career Development
d) Self-assessment of Confidence and Progress in Educational/Career Planning

Question 2 — How do college students who have used SIGI or Discover evaluate their experience in terms of:

a) Ease of use.
b) Self assessments used.
c) Quality of occupational/educational information.
d) Perceived total effectiveness.

Method

Subjects

For the purposes of answering the questions posed, a single undergraduate class of students enrolled in EPSY 102 Career Development for the Fall Semester of 1984 were studied. This course has an its purpose assisting freshman, sophmore and undeclared majors with becoming more aware of their abilities, interests and values and the requirements of tentatively chosen careers. The course is worth two credits and normally meets three times per week for 50 minutes. For the purpose of this research, the class of approximately 50 students were randomly assigned to either the SIGI or Discover system and were expected to devote approximately one class period per week on only the system to which they were assigned. The other two class periods were devoted to regular class activities. Exposure to each system was gained over approximately a two month period. The subjects were pre and post tested with four instruments designed to assess various aspects of career development. Also, reaction data were gathered

for 39 of the 41 students who completed the treatment. The SIGI group averaged 4.5 hours on the system and the Discover group averaged 4.9 hours. Table 1 provides additional demographic data on the 45 subjects who were enrolled in the class at the beginning of the study.

Instrumentation

Both SIGI and Discover were delivered via IBM XT microcomputers. Five different paper and pencil instruments were used to evaluate the two computer based career guidance systems. Each is described here briefly, and a copy of three of the instruments, that were developed specifically for this research, are attached as appendices to this paper.

Career Development Inventory (CDI) - This instrument was selected as a measure of career maturity. It was developed by Super and others (1981) over a 24 year period and has eight scales which measure Career Planning, Career Exploration, Decision-Making, World of Work Information, Knowledge of Preferred Occupation, Career Development-Attitudes, Career Development-Knowledge, and Career Orientation Total. The first four scales each have 20 items, while scale five (KPO) has 40 items. The remaining three scales are composites made up from the original five scales. Scores are scaled with a $\bar{X}$=100 and a SD=20. The internal consistency reliability of the five unique scales range from .89 to .57. The composite scales have higher reliability given their greater length (median=.86).

Career Decision Scale (CDS) - This instrument, developed by Osipow and others (1980), is designed to identify barriers preventing individuals from making career decisions. The instrument consists of 19 items, with item 1 and 2 indicating certainty of choice and items 3 through 18 indicating indecision. Item 19 is open-ended and not scored. The items are all four point Likert type with 4="Exactly like me" and 1="Not at all like me". Items 3-18 were used in this study to represent an indecision scale with the higher score representing

greater indecision. Test-retest reliability for the whole scale is reported by the authors to be .90 and .82 in two studies of an unspecified nature. Norms are provided for both high school and college students.

Survey of Career Developed (SCD) - This instrument was developed by the counseling staff at Penn State and utilized by Garis (1982) in his study of the Discover system. It is a 30 item, five point Likert type rating scale designed specifically for use with Discover. The items are grouped into five scales of six items each with the response format for all items ranging from 5="I have already done this" to 1="I have not yet thought about it". Only the total score for the 30 items which ranges from 30 to 150 was used in this study. Garis reports a split-half internal consistancy reliability for the SCD total score of .95.

Self-Assessment of Confidence and Progress in Educational/Career Planning (SACP) This 10 item instrument was developed by Garis (1982) for use along with the SCD in the study of Discover at Penn State. The measure includes items reflecting confidence in clarity of self-information, decision-making ability, knowledge of career information as well as present ability to choose appropriate majors or careers. All but the first item utilize five alternative responses with the first response representing the greatest confidence and the last representing the least confidence. Item number 1 has only three choices. All items were scored on a five point scale except for item 1 which was scored five for the most confidence, three for the middle response and one for the least confidence. Thus, the total score for the ten items had a possible range from 10 to 50. Reliability has not been calculated for this measure.

Computer Assisted Career Guidance Reaction Questionnaire (CACGRQ) - The instrument utilized to collect reaction data from subjects in this study was developed by the project staff based on the characteristics selected for study. These characteristics and many of the items were derived from a review of literature in the area of career development and computer assisted guidance. A five point

Likert scale was chosen as the format for most of the items with a few items utilizing a multiple choice format. A section of biographical data was also included.

Analysis

All data collected were entered into the TAMU main frame twin amdahl system by a remote wylbur terminal. The SPSSx statistical package was used to compute frequency/percent, means, chi square, independent and dependent t tests, and multiple regression analysis. Table 2 reports the results of the regression analysis with the eight CDI scales as well as the dependent t test for the 14 subjects out of the original 20 for whom pre test scores were available The full model regression contained the pre test and the treatment variable (SIGI or Discover). The effect of the treatment was obtained by calculating the change in R^2 due to the absence of the treatment variable.

Table 3 reports similar information to that described above for the variables SCD, SACP, and CDS. A total of 41 subjects with both pre and post test scores were included here. The regression analysis utilized three variables in addition to pre test and treatment. These variables, described in table 1, were sex, total work experience in weeks, and how positively the student felt about college on a 1 to 5 scale. The full model analysis reported in Table 3 is the most significant R^2 obtained with a step down technique with the treatment variable remaining in the model. The R^2 change was computed the same as for the CDI analysis above.

Tables 4, 5, and 6 report the reaction of 39 subjects to the two systems as obtained on the CACGRQ using frequencies presented as percents, means, chi square and independent t tests to examine differences.

Findings

Demographic Data

Table 1 presents this data which was gathered on the subjects at the beginning of the semester before they hand any exposure to either system. As can be seen from the table, the sample was largely female (69%), had an average of one year college with a range from zero to 64 credits earned, and either had no grade point average or a relatively low average. In terms of experience, background and attitude, it appears that many subjects had some work experience of a part-time or full-time nature, came from fairly high socio-economic backgraounds and were relatively positively inclined towards their college experience.

Career Development Inventory

Table 2 reports both the multiple regression analysis (MRA) and the dependent t test analysis for change for the total group who had pre and post test scores on the CDI. Because of the expense and time consuming nature of this instrument, only 20 pre tests were given and six of these became dropouts from the course. The remaining 14 were analyzed with an MRA cotaining pre test and the treatment variable (SIGI or Discover). With such a small sample, only two of the eight full model MRA's were significant and none of the eight scales yielded a significant R^2 change when the treatment variable was eliminated. Even with much larger samples, only the CDI scales Career Planning, Career Exploration, and World of Work Information appear to have produced the size of R^2 that would allow for the effects of any intervention to be noticeable. This is undoubtedly, at least partially, due to the relatively low reliability of the other two scales. The same problem appears to be present for one of the composite scales (Career Development Knowledge).

An examination of the dependent t test analysis for absolute change for the

entire group sheds some additional light on the measurement of change using the CDI. For the two attitude scales Career Planning and Career Exploration, and the composite Career Development-Attitude a great deal of change occured over the several months that the students were enrolled in the career development course and were using SIGI and Discover. For the other three scales and the composite of those scales almost no change occured. In fact, on three of the four, the change was actually in the negative direction. The change for the Career Development Total composite was also positive and significant, but this was due to the role of the attitude scores within the total. From an examination of this data, it can be concluded that the Career Development course with either SIGI or Discover produced a significant change in career development attitude, but not in career development knowledge, at least as is measured by the CDI.

Other Career Development Measures

Table 3 contains the MRA and t test change data for the SCD, SACP, and CDS for the 41 subjects on whom complete data were availale. These MRA's utilized sex, total work experience in weeks and attitude towards college in addition to the treatment (SIGI/Discover) and the pre test as independent variables. As can be seen from the table, only the full model for SACP yields a significant R^2 and none of the R^2 changes for the treatment (SIGI/Discover) were significant.

The dependent t test analysis, however, does show relatively large and significant changes on all three measures as a result of their career develoment course experience. In the case of the CDS, the change is negative, but should be interpreted as a positive finding since a high score represents greater indecision. It appears from this data that whether or not is is due to the use of a computer-based guidance system, or to the other activities that take place in a course of this nature, a great deal of change in the students has occured. This change, however, does not reflect differences that can be attributed to the

particular system used.

Reaction Questionnaires

Thirty-nine students of the 41 who finished the career cevelopment course completed the reaction questionnaire. Table 4 lists the combined reactions to the two computer-based guidance systems for the Likert type questionnaire items. These undergraduate students rated the computer-based guidance systems rather high on most items by responding with 4's and 5's. Responses to Items 16 and 17 were somewhat lower on the five-point scale with some students rating the systems average to low on opportunity to make changes within the program, and ease of printing information desired.

Table 5 reports the findings on the reaction questionnaire comparing the students' ratings of the SIGI and Discover systems. There were no significant differences in the ratings of the two systems with the exception of Item 16 where there was a difference that was significant at the .05 level. Discover received a higher rating on "Opportunity to make changes within the system."

Responses to the multiple choice items of the reaction questionnaire are reported in Table 6. There were no significant differences in the responses for Discover and SIGI; therefore, the students' responses for the two systems are combined in Table 3. Item 21 indicated that almost 1/3 of the students felt that the computer-based guidance systems exposed them to new information about themselves, while 2/3 of the students felt the systems confirmed what they knew about themselves. Only 2 students felt the information reported was unrelated to them. For Item 26, 58% of the students reported that they had received all the information that they needed. The remaining 42% of the students all needed information but in different areas (8% needed educational information, 18% needed occupational information, and 16% needed information on decision making). Responses to item 31 indicate that the career guidance systems helped the students

narrow their career choices - 93% had either selected a career or narrowed their choices.

Discussion

In a recent article in a special issue of the Journal of Counseling and Development on computers in counseling, Pyle (1984) stated that the tidal wave of technology is here. He raised the question of how this tidal wave will be absorbed by the profession of career counseling. Computer-assisted guidance and information systems are not new, but the use of these systems has become widespread in the 1980's with the availability of microcomputers. A recent national survey indicated that about a quarter of the high schools in the U.S. are making use of computer-based guidance systems, and the number has probably increased substantially since the survey (Katz, 1984). Katz estimates that 1,000 postsecondary institutions are also using computerized guidance and information systems. With so many educational institutions already using these systems and with many more institutions considering their use, it is extremely important to take a close look at the computer guidance systems available and identify distinctive capabilities and limitations of each system.

Maze (1984) suggests that the first step in selecting a computerized guidance system is to evaluate the needs of the educational institution seeking such a system. The next step is to gather literature on the available software and determine which programs seem to be appropriate. Consideration should also be given to how various systems fit into the overall counseling program (Gelesko McKee and Schroedl Chiavaroli, 1984). Areas that need to be considered include physical location of the computer, staffing needs, support materials, implementation strategies, and counselor attitudes.

In an article on the computer and career development, Jo Ann Harris-Bowlsby (1984) identifies the best capabilities of the computer. They are:

1. Interactive dialogue.
2. Storage of data files.
3. Searching of data files.
4. Assessment and interpretation.
5. Individualization of treatment.

These capabilities can enhance career counseling by (a) assisting clients in making career choices, (b) assisting clients in acquiring decision making skills, and (c) enhancing the general adjustment status of clients (Pyle, 1984). These capabilities and outcomes should be considered when selecting a computer-based guidance system.

As indicated in an earlier section of this paper, the Career Development Inventory was developed by Super and others over a 24 year period. Super was primarily responsible for developing the concept of "Career Maturity," and the purpose of the instrument is to measure this concept. Career maturity is difficult to measure as evidenced by Super and his colleagues taking 24 years to develop an instrument to assess it. Several years prior to the publication of Super's instrument, John Crites published his Career Maturity Inventory; however, Crites' instrument has come under considerable criticism by experts in the testing field because of some relatively low reliability coefficients and questions about some of the validity studies. In analyzing the data from the current study using the Career Develoment Inventory, there were significant differences between the pre- and post-test scores for the attitude scales of the instrument, but there were no significant differences on the knowledge scales. These results may be partially due to the career development course and the computer-based guidance program that the students participated in, but the results are also probably due to the weaknesses of the knowledge scales of the CDI. These scales have relatively low reliabilities and are a definite weakness of the instrument. The CDI also is an expensive instrument and takes

considerable time to administer therefore, it is probably not a good instrument to use in further research with computer-based guidance systems unless the knowledge scales are improved.

On the other career development measures used in this study, there were significant differences between the pre- and post-test scores, but the effects of the computer-based guidance systems could not be separated from the effects of the career development course that the students were taking. Further research is needed where the computer-based treatment is kept separate from other types of career counseling and assistance that the students are receiving and where the student groups using the guidance systems are varied. Pyle (1984) states that very little consistent data are available to help in determining differences and effects of traditional versus computerized counseling. He also states that the impact of computerized guidance on users over time needs to be researched.

The results of this study indicate that the undergraduate student users gave both the SIGI and Discover systems mostly high ratings, and there was very little difference in the ratings of the two systems. Currently the researchers involved in this study are also collecting and analyzing reaction data from counselors in training who have used both of these systems themselves. Further research is needed from counseling professionals on their reactins to various computer-based guidance systems.

Martin Katz (1984), a pioneer and leader in the computer-assisted guidance field issued a warning in his recent article in the Journal of Counseling and Development. He points out that an individual counselor can do harm, but the extent is limited because each counselor works with a relatively small clientele each year. The damage is also limited by the variability of the counselor from one occasion to another, and the mistakes a counselor makes at one time with one

client may be avoided at other times with other clients. Clientele interacting with a computer-based guidance system over a period of a year, however, may number in the hundreds of thousands, and the computer guidance system is completely consistent. Therefore, it is important that there are high standards for computer-based guidance systems and that the evaluation of these systems be extensive and ongoing.

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Table 1.

Demographic Data for EPSY 102, Fall, 1984 for SIGI and Discover.

Variable	SIGI (N=25) Freq/ Range	$\bar{X}$	SD	Discover (N=20) Freq/ Range	$\bar{X}$	SD	Total (N=45) Freq/ Range	$\bar{X}$
Sex								
Male	8			6			14	
Female	17			14			31	
Age	18-22	18.76	.93	17-21	18.60	.88	17-22	18.7
Bachelor's Credits Earned	0-50	32.13	8.38	0-64	35.00	13.58	0-64	33.0
		(N=13)			(N=6)			
G.P.A.	0-3.4	2.22	.50	0-2.8	1.99	.67	0-3.4	2.15
Full Time Work Exp. in Weeks	0-208	19.48	42	0-75	10.7	22.02	0-208	17
Part time Work Exp. in Weeks	0-172	67.56	48	0-110	40.6	36.46	0-172	55
Father's Education Level	12-16+	15.56	1.87	12-16+	16.3	1.17	12-16+	15.8
Feelings Toward College 1=Negative 5=Positive	2-5	3.84	.62	2-5	3.6	.68	2-5	3.75

Table 2.

Career Development Inventory Regression Pre-Post Change due to SIGI or Discover and Dependent t-test for Absolute Change (N=14).

Statistics	Career Development Inventory Scales							
	CP	CE	CDM	WWI	KPO	CDA	CDK	CDT
Full Model R2	.45	.20	.06	.28	.07	.48	.15	.33
Signif. of R2	.04	NS	NS	NS	NS	.03	NS	NS
R2 Change for SIGI/Discover	.00	.01	-.03	.08	-.01	.03	-.08	.02
Signif. of R2 Change	NS	NS	NS	NS	NS	NS	NS	NS
$\bar{X}$ Pre	95.64	113.50	122.28	110.78	114.61	105.28	118.00	114.64
$\bar{X}$ Post	120.64	132.36	118.57	111.86	113.53	130.85	116.64	129.14
Change	25.00	18.85	-3.71	1.07	-1.07	25.57	-1.36	14.50
t	7.11	4.15	-.98	.36	-.32	8.31	-.41	6.01
Signif. Level	.01	.01	NS	NS	NS	.01	NS	.01

Table 3.

Survey of Career Development, Self-Assessment of Confidence and Progress, in Educational/Career Planning, and Career Decision Scale Regression Pre-Post Changes due to SIGI or Discover and Dependent t-test for Absolute Change (N=41).

Statistics	Survey of Career Development	Self-Assessment of Confidence & Progress	Career Decision Scale
Full Model R2	.13	.19	.04
Signif. of R2	NS	.05	NS
R2 Change for SIGI/Discover	.00	.02	.01
Signif. of R2 Change	NS	NS	NS
$\bar{X}$ Pre	100.10	29.29	34.29
$\bar{X}$ Post	123.22	37.29	28.00
Change	23.12	8.00	-6.29
t	6.99	8.20	-4.41
Signif. Level	.01	.01	.01

Table 4.

Frequency of Responses by Percent as Reported on the Reaction Questionnaire for EPSY 102, Fall, 1984, for SIGI and Discover.

Question	N	PERCENT (%) 1	2	3	4	5
EASE OF USE OF THE SYSTEM						
11. Availability of the system when you wanted it.	39	3	3	3	37	55
12. Ease of using the keyboard.	39	0	0	3	26	71
13. Quality of the screen display.	39	0	0	5	24	71
14. Clear directions to operate within the program.	39	3	0	5	26	66
15. Reading level of the information provided.	39	3	3	5	21	68
16. Opportunity to make changes within the program.	38	5	8	32	27	27
17. Ease of printing the information you wanted.	39	11	13	37	11	29
SELF ASSESSMENTS USED BY SYSTEM						
18. Estimate of your ability level used.	39	3	8	16	53	21
19. Measure of occupational interest used.	23	0	0	9	59	32
20. Measure of work values used.	39	0	3	11	53	34
QUALITY OF THE OCCUPATIONAL AND EDUCATIONAL INFORMATION						
22. Arrangement of the information provided.	39	3	0	3	53	42
23. Correctness of the information provided.	39	0	0	8	45	47
24. Amount of the information provided.	39	0	3	3	47	47
25. Helpfulness of the information provided.	39	3	0	5	45	47
PERCEIVED TOTAL EFFECTIVENESS						
27. How helpful was the computer system?	39	3	3	8	40	47
28. How enjoyable was the experience?	39	5	0	18	34	42
29. How certain are you about your career choice as a result of using the computer system.	39	0	11	21	47	21
30. How satisfactory was the computer system compared to a non-computer approach?	39	0	5	0	13	82

Table 5.

Statistical Findings on the Reaction Questionnaire for EPSY 102, Fall, 1984 for SIGI and Discover.

Question	X	chisq	Xsig	Xdis	t
EASE OF USE OF THE SYSTEM					
11. Availability of the system when you wanted it.	4.4	4.5	4.5	4.3	.7
12. Ease of using the keyboard.	4.7	.9	4.7	4.7	.4
13. Quality of the screen display.	4.7	2.9	4.6	4.7	.5
14. Clear directions to operate within the program.	4.5	4.9	4.6	4.5	.2
15. Reading level of the information provided.	4.5	4.4	4.4	4.6	.3
16. Opportunity to make changes within the program.	3.6	7.2	3.2	4.0	2.2 *
17. Ease of printing the information you wanted.	3.4	7.1	3.6	3.2	.9
SELF ASSESSMENTS USED BY SYSTEM					
18. Estimate of your ability level used.	3.8	5.7	3.7	4.0	.9
19. Measure of occupational interest used.	4.2	.5	4.5	4.2	.7
20. Measure of work values used.	4.2	3.4	4.2	4.2	.3
QUALITY OF THE OCCUPATIONAL AND EDUCATIONAL INFORMATION					
22. Arrangement of the information provided.	4.3	2.2	4.2	4.4	.7
23. Correctness of the information provided.	4.4	1.9	4.4	4.4	.5
24. Amount of the information provided.	4.4	2.3	4.3	4.5	1.0
25. Helpfulness of the information provided.	4.3	1.4	4.3	4.4	.5
PERCEIVED TOTAL EFFECTIVENESS					
27. How helpful was the computer system?	4.3	6.4	4.3	4.3	.1
28. How enjoyable was the experience?	4.0	.4	4.0	4.2	.4
29. How certain are you about your career choice as a result of using the computer system.	3.8	.1	3.8	3.8	.1
30. How satisfactory was the computer system compared to a non-computer approach?	4.6	1.7	4.8	4.7	.5

* Significant at the .05 level

Table 6.

Responses by Number/Percent to Multiple Choice Items for EPSY 102, Fall, 1984 for SIGI and Discover.

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21. Check the following statement which best applies to the self assessment component:

Number/Percent	
12/29	Exposed me to new information about myself.
25/66	Confirmed what I know about myself.
1/ 3	Conflicted with what I know about myself.
1/ 3	Did not pertain to me.

Chi Square = 6.1 NS

26. Check the following statement which best applies to the information component:

Number/Percent	
22/58	I received all the information I needed.
3/ 8	I needed more information on educational opportunities.
8/18	I needed more information on occupations.
6/16	I needed more information on decision making.

Chi Square= 3.8 NS

31. Since using the computer based career guidance system:

Number/Percent	
14/37	I have selected an occupation.
16/40	I am seriously considering several occupations.
6/16	I have narrowed my choice down to a broad group of occupations.
3/ 8	I have developed some vague ideas about occupations.
0/ 0	I am no closer than before.

Chi Square= 1.5 NS

Name_____ S.S.#_____ Date_____

SELF-ASSESSMENT OF CONFIDENCE AND PROGRESS
IN EDUCATIONAL/CAREER PLANNING *

1. Please check the following statement which you believe would be most applicable to you.

_____a. I often feel anxious about my lack of knowledge concerning my academic and career plans. It seems like almost everyone else but me knows what they want to do in life. Not being sure of my career plans hinders my academic performance and my enjoyment of college life in general.

_____b. Although I am not certain of my academic and career plans, I usually don't get too upset about it. I believe that given some time and effort I'll be able to make good educational and career decisions.

_____c. Since I have a pretty good idea of my academic and career plans, I usually am not very upset or anxious about them.

PLEASE CIRCLE THE NUMBER ON THE SCALE WHICH IS MOST APPROPRIATE FOR YOU.

2. How confident do you feel in the knowledge about yourself regarding your work values, i.e., what is important to you in your career?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

3. How confident are you about your educational and career interest, i.e., what you would like most in your academic major and work?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

4. How confident are you about your abilities related to education and work, i.e., what your strengths and weaknesses would be in particular majors or careers?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

5. How confident are you in your present ability to produce a list of viable, realistic potential academic majors and careers?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

6. Do you believe that you have adequate knowledge concerning the nature of academic programs (majors) which might be viable alternatives for you?

_____ Have all the knowledge I need

_____ Have a great deal of knowledge

_____ Have some knowledge

_____ Have very little knowledge

_____ Have no knowledge

7. Do you believe that you have adequate knowledge concerning the nature of careers or occupations which might be viable alternatives for you?

_____ Have all the knowledge I need

_____ Have a great deal of knowledge

_____ Have some knowledge

_____ Have very little knowledge

_____ Have no knowledge

PLEASE CIRCLE THE NUMBER ON THE SCALE WHICH IS MOST APPROPRIATE FOR YOU.

8. How certain are you that you have an effective system or process for making your own future decisions regarding academic and career planning?

1	2	3	4	5
Not At All Certain	Not Very Certain	Only a Little Certain	Very Certain	Entirely Certain

9. How confident are you in your present choice of an appropriate academic major?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

10. How confident are you in your present knowledge of your post graduation career plans?

1	2	3	4	5
Not At All Confident	Not Very Confident	Only a Little Confident	Very Confident	Totally Confident

* Adapted from an earlier version of this instrument from Garis (1982), Penn State University. Reproduced with permission by the Computer Assisted Guidance Project (1984), Texas A&M University.

Name_____ S.S.#_____ Date_____

SURVEY OF CAREER DEVELOPMENT *

On the pages which follow, you will be asked to rate each of 30 statements according to the following scale:

5 = I have already done this.

4 = I am now doing what needs to be done.

3 = I know what to do about it.

2 = I have thought about it, but do not yet know what to do about it.

1 = I have not yet thought much about it.

In each case, circle the number of your choice for each of the statements.

1.	Learning what values are.	5	4	3	2	1
2.	Clarifying my own values.	5	4	3	2	1
3.	Deciding which values are most important to me.	5	4	3	2	1
4.	Finding out how values will affect my career choice.	5	4	3	2	1
5.	Comparing my values with the values of parents, friends, and society.	5	4	3	2	1
6.	Learning how values affect decision making.	5	4	3	2	1
7.	Finding out what my interests are.	5	4	3	2	1
8.	Exploring my abilities.	5	4	3	2	1
9.	Finding out how my interests can be used in an occupation.	5	4	3	2	1
10.	Finding out how my abilities can be used in an occupation.	5	4	3	2	1
11.	Clarifying my ideas about the type of work I would really like to do.	5	4	3	2	1
12.	Deciding what activities I enjoy most.	5	4	3	2	1

13.	Finding out how to make good decisions.	5	4	3	2	1
14.	Learning the important steps of the decision-making process.	5	4	3	2	1
15.	Learning the different ways of making decisions.	5	4	3		1
16.	Learning more about how I make decisions.	5	4	3	2	1
17.	Finding out how decision-making skills may affect my choice of occupation and my lifestyle.	5	4	3	2	1
18.	Using my decision-making skills to get me to my goals.	5	4	3	2	1
19.	Finding out more about what people do in certain kinds of work.	5	4	3	2	1
20.	Learning how occupations can be classified (grouped).	5	4	3	2	1
21.	Learning what skills and training are required for certain jobs.	5	4	3	2	1
22.	Exploring a lot of occupations before making a decision.	5	4	3	2	1
23.	Getting a temporary job that will help me decide what kind of work I really might go into.	5	4	3	2	1
24.	Finding out how to explore many different occupations.	5	4	3	2	1
25.	Knowing what steps to take to achieve my career objective.	5	4	3	2	1
26.	Taking steps which will help me achieve my ambitions.	5	4	3	2	1
27.	Making specific plans to achieve my current career goals.	5	4	3	2	1
28.	Deciding how to qualify for the work I now want to do.	5	4	3	2	1
29.	Getting the special training and experience I need.	5	4	3	2	1
30.	Selecting a first job or a plan to get training for my first job.	5	4	3	2	1

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COMPUTER ASSISTED CAREER GUIDANCE REACTION QUESTIONNAIRE *

For Research Use Leave Blank

I. BIOGRAPHICAL INFORMATION

1. Name_____

2. What is your current educational/professional status?
   ____ TAMU undergraduate (if in course, prefix & No_____)
   ____ TAMU graduate student (if in course, prefix & No_____)
   ____ TAMU faculty/staff.
   ____ Practicing school counselor.
   ____ High School student.
   ____ Other (name)_____

3. If a professional educator, years of experience in the field? ____

4. What is your age? ____ 5. What is your sex? ____

6. What is your level of experience with computers? (check one)

   Low Low Average Average High Average High

7. Which of the following career guidance systems have you experienced? (check all that apply)

   SIGI___ Discover___ Other(name)_____

8. Which of the following computer guidance systems are you evaluating with this questionnaire? (check only one)

   SIGI___ Discover___ Other(name)_____

9. Time spent on computer system being evaluated?(approx. hours)_____

10. How many modules did you complete? (check all that apply on system being evaluated).

SIGI		Discover	
Values	____	Self Information	____
Locate	____	Career Information	____
Compare	____	Occupational File	____
Planning	____	Educational Institutions	____
Strategy	____		

FOR EACH OF THE FOLLOWING ITEMS, RATE THE COMPUTER SYSTEM BEING EVALUATED ON A FIVE POINT SCALE:

II. EASE OF USE OF THE SYSTEM

	Low High
11. Availability of system when you wanted it.	1 2 3 4 5
12. Ease in using the keyboard.	1 2 3 4 5
13. Quality of the screen display.	1 2 3 4 5
14. Clear directions to operate within the program.	1 2 3 4 5
15. Reading level of the information provided.	1 2 3 4 5
16. Opportunity to make changes within the program.	1 2 3 4 5
17. Ease of printing the information you wanted.	1 2 3 4 5

III. SELF ASSESSMENTS USED BY THE COMPUTER SYSTEM

	Low High
18. Estimate of your ability level used.	1 2 3 4 5
19. Measure of occupational interest used (not on SIGI).	1 2 3 4 5
20. Measure of work values used.	1 2 3 4 5

21. Check the following statement which best applies to the self assessment component:
   ____ Exposed me to new information about myself.
   ____ Confirmed what I know about myself.
   ____ Conflicted with what I know about myself.
   ____ Did not pertain to me.

For Research Use Leave Blank

IV. QUALITY OF THE OCCUPATIONAL & EDUCATIONAL INFORMATION

	Low High
22. Arrangement of the information provided.	1 2 3 4 5
23. Correctness of the information provided.	1 2 3 4 5
24. Amount of information provided.	1 2 3 4 5
25. Helpfulness of the information provided.	1 2 3 4 5

26. Check the following statement which best applies to the information component:
    - ____ I received all the information I needed.
    - ____ I needed more information on educational opportunities.
    - ____ I needed more information on occupations.
    - ____ I needed more information on decision making.

V. PERCEIVED TOTAL EFFECTIVENESS

	Low High
27. How helpful was the computer system?	1 2 3 4 5
28. How enjoyable was the experience?	1 2 3 4 5
29. How certain are you about your career choice as a result of using the computer system?	1 2 3 4 5
30. How satisfactory was the computer system compared to a non computer approach?	1 2 3 4 5

31. Since using the computer based career guidance system (check one):
    - ____ I have selected an occupation.
    - ____ I am seriously considering several occupations.
    - ____ I have narrowed my choice down to a broad group of occupations.
    - ____ I have developed some vague ideas about occupations.
    - ____ I am no closer than before.

32. Since using the computer career guidance system, I have:
    - ____ Sought out material.
    - ____ Talked to a counselor.
    - ____ Talked to a parent or other knowledgeable adult.
    - ____ Talked to someone in the occupation.
    - ____ Not sought out more information.

AS A RESULT OF YOUR EXPOSURE TO COMPUTER ASSISTED CAREER GUIDANCE:

33. What occupation do you plan to enter?_____

34. What is your feeling about this approach to career exploration?

_____

_____

_____

35. What change in the system would you suggest?_____

_____

_____

_____

For Research Use Leave Blank | For Research Use Leave Blank | For Research Use Leave Blank

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